King County

Technology Governance

Technology Qualifications Report

Guidelines

VERSION 1.8

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EXECUTIVE SUMMARY

Before pursuing a business initiative to solve a business problem or need, a department should go through several steps to 'qualify' that the initiative is worth undertaking. Initial assessments should determine whether the opportunity or solution is economical, technically feasible, within resource constraints, and in alignment with departmental business and technology plans. Assessment findings are then consolidated into a business case document to be communicated with appropriate management for decision making.

If the project involves information technology, then the technology components must also be 'qualified' through assessments with findings documented in a Technology Qualifications Report (TQR). The business case then utilizes the TQR as input to ensure that it adequately reflects the technology impacts of the initiative. Several iterations between the business case and TQR may be needed as different solution options are identified and evaluated. Tasks to be performed in creating a TQR include:

- Ensure understanding of relevant business goals and objectives
- Perform solution alternatives identification
- Perform feasibility assessment on identified alternatives
- Evaluate impact of each feasible alternative on people, process, and technology
- Estimate costs and benefit for each feasible alternative.
- Utilize/review checklists to ensure appropriate issues have been addressed
- Summarize the relative strengths and weaknesses of each alternative
- Recommend the best technology solution and provide supporting reasons
- Cross-walk findings back to the business case
- Iterate if needed based on any cross-walk findings

By completing a TQR, departments ensure that the technology information needed by business cases is consistently and adequately identified, evaluated, and communicated. Having technology information consistently included in the business case provides several benefits including:

- Viability of technical solutions included in initial decisions
- Project approvals based on better information
- Reduced project risk caused by better understanding of and planning for technology impacts
- Improved expectation setting for all stakeholders on technology implications of initiative
- Improved employee effectiveness due to consistent process for identifying and communicating technology components of an initiative
- Increased sponsor confidence in technology component of business case

This document is intended to provide the information and direction needed to guide departments in creating Technology Qualifications Reports. It includes a summary, process overview, anticipated benefits, component instructions, and relevant supplementary information contained in appendix A – E, including background information on how the TQR fits within the context of a typical project (in Appendix A - required reading for first time users)

The Technology Qualifications Report and the broader business case process that it supports are expected to evolve and continually improve over time as best practices are identified and incorporated. This document represents a starting point from which that evolution can and should occur.

THE TECHNOLOGY QUALIFICATIONS REPORT

PROCESS OVERVIEW

To avoid wasted expense and over-extension of resources, department management must make well-informed decisions based on an initiative's business case. The Technology Qualifications Report provides information needed in the business case related to technical requirements, solution alternatives, alternatives feasibility, cost/benefit analysis, estimated staffing, effort, and timelines. Information in the TQR is primarily intended to support initial go/no-go decisions regarding the proposed project.

The TQR should be created early in the initiation stage of a project (prior to detailed requirements and detailed project plans are created - see Appendix A) in support of an initiative's business case. If necessary, the TQR can be created even if a business case does not exist. However, business case elements must be defined within the TQR in order to ensure that it is appropriately addressing project needs.. Once the project has been approved, updates to the technology component of the business case for any future re-decisioning will need to come from other project artifacts and processes, and not the TQR (such as the detailed project plan, etc…).

The TQR should be created by experienced technology staff with knowledge of the business case area and should involve those who will be responsible for implementing the technology component of the solution as much as possible. This increases the incentive for understanding and accuracy of the TQR along with increasing the commitment to deliver the identified solution.

Not all IT projects need to create a TQR. Those projects that do not impact the technology infrastructure (i.e. studies, proposals, plan development, some process improvement efforts, etc…) and IT equipment replacement efforts are examples of projects where a TQR does not make sense. Similarly; small, straightforward projects (like simple software version upgrades and projects under $100K where we have successfully implemented similar solutions) require much less effort and detail than large, complex projects. The TQR author needs to use judgment in determining what effort is appropriate to adequately support the project's business case. Promising solution alternatives should include more analysis and information, while less promising alternatives warrant less analysis and detail.

When a TQR is appropriate, it should be created in support of initial project proposals. Developing a solution outline and describing its key attributes is a primary focus of the TQR. The solution outline should provide enough information for the business case pertaining to:

- Description of recommended technical solution and alternatives - describe whether the opportunity is a good match to fulfill the business need identified in the business case.
- Impact of solution on business case (does it meet all high level requirements? Do various alternatives impact people and process in different ways?)
- Estimated technology costs (how accurate are these? Who was involved in developing them? What was estimating approach? Are supporting documents available?)
- Resources requirements to implement the solution (regardless of who is supplying those resources and how they are funded)
- Approximate time estimates and major milestones
- Assumptions
- Risks

At the beginning of the qualification process, the department should establish a general strategy for answering questions such as:

- Is the opportunity consistent with the goals and objectives of the department and King County? How does it help to accomplish strategic business and technology goals?
- Can the department deliver the solution?

- What will it cost in terms of people and investment?
- Where are the risks and what contingencies should be established to protect against them?

Developing a rough outline of the solution provides an excellent opportunity to examine technical feasibility and to make and compare various approach alternatives. Vendor information related to various solution alternatives can be collected through RFI's, RFQ's, and/or RFPs if needed

Note: Some initiatives may require the assistance of a consulting engagement during which the consultants can help the department learn its situation and architecture and establish high level requirements for the solution. On the basis of the information available or acquired, the department then develops a solution outline to establish technical viability and to establish the cost basis for the business case.

All TQR documents should be targeted to communicate effectively with an executive level business audience (brief, clear, and action focused). The TQR should be documented and cross-walked with other project deliverables, especially the business case. This will ensure consistency and integration across project plans, activities and documents. Some iteration between the TQR and business case may be needed initially to adequately explore the impact of alternative solutions and to understand and explore the benefits that each solution alternative uniquely provides.

Some of the project tasks that may be occurring at the same time as the development of the initial TQR include:

- Business case development and iteration with the TQR
- Current state documentation
- Gap analysis (between current state and desired state)
- High-level business requirements definition
- Business process impact analysis and re-design
- Budget process support
- Vendor interactions (through RFI, RFQ, RFP)
- Resource planning
- Other project activities

Each of these activities may impact the TQR, so good project communication is essential to an accurate TQR. When the recommended solution has been identified and the business case is ready for review and decision making by sponsors, then the TQR should be finalized.

TQR Completeness Checklist - This checklist identifies questions that the typical Business Case should expect the TQR to answer. Review these questions to ensure that the TQR is providing needed/expected information to the Business Case

- ❑ How does the technical solution achieve the business objectives & goals?
- ❑ Any deviations from business goals and objectives?
- ❑ What is the recommended technical solution? Why? How does that solution affect the costs and benefits of the overall business case?
- ❑ What is the approach for the solution (custom developed, COTS, or a combination?). Why has this approach been proposed?
- ❑ What alternatives were explored and why were they not recommended (strengths and weaknesses)? Are there unique benefits from any of these solutions that should be known should circumstances change in the future?
- ❑ What are the organizational and financial impacts of implementing the preferred technical solution? Project costs? O&M costs?
- ❑ What are the major risks introduced? What mitigations are available?
- ❑ What are the critical success factors for implementing and maintaining the technical solution? Have similar efforts been performed at King County in the past?
- ❑ What are the organizational impacts on people, process, and technology?
    - Will business processes need to be changed to align with the technology?
    - What training must occur?
    - What will be required for on-going support?
- ❑ Are Vendors involved with the solution? How should the vendor arrangement be managed? Is customization involved?
- ❑ Who will be responsible for implementing the technology solution? Why are they the best choice?
- ❑ Review the Form IT preparation checklist for additional questions that may be appropriate: FORM IT Preparation Checklist

The TQR can also be used as input to other program deliverables such as requirements specifications, proposal substance, and program/project plans.

BENEFITS

Qualifying the technical solution for the project as early as possible provides several benefits. Primary among these are:

- Provides a vehicle for assessing technology impacts on the business case in support of project justification efforts
- Reduced risk from information technology by:
  - Increased accuracy of technology solution reflected within the business case resulting in improved governance decisions
  - Improved understanding and expectations of technology solution due to increased communication of alternative strengths and weaknesses
  - Increased accuracy of costing due to
    - More focused initial evaluations
    - Proper personnel performing initial evaluations
- Increased project cohesiveness moving forward due to increased communication and involvement
- Technology baselines are set so that future changes can create better change impact assessments
- Minimizes future re-work that may be caused by unclear direction and/or misunderstandings

RISK ASSESSMENT

A key concern of qualification is the level of risk associated with undertaking a technology solution approach. Assessing technology risks before the project is underway and factoring those risks (and potential mitigations) into initial approval decisions is one of the primary values of the TQR. The department should assess all business and technical elements that could jeopardize the success of undertaking a program/project. A thorough effort to clarify these risks involves looking at the opportunity from a number of perspectives. Utilize the Risk Assessment checklist to aid in reviewing risk from multiple perspectives. Once all risks have been identified and evaluated (including potential mitigation strategies) the department then determines if it should proceed with creating a program/project to address the desired solution approach. If proceeding, identified risks should be added to the project's risk log, and risk mitigation plans should be included in project plans.

Risk Assessment Checklist -Use this checklist to help in identifying threats to project success

- ❑ Is the solution technically possible?
- ❑ Are we experienced in this type of technology?
- ❑ Is this an established technology in the marketplace?
- ❑ Will we build, purchase, or purchase then modify the solution?
- ❑ How many integration points are there? What is the criticality of those connections?
- ❑ How will implementing the solution impact our current operating environment?
- ❑ Who is solution delivery dependant on?
- ❑ What would cause us to back out this solution after it has already been implemented?
- ❑ What business processes are impacted? What is their criticality? How has the organization responded to similar process changes in the past?
- ❑ Are resources and funding available? Will they be dedicated to the project or split between projects (potentially leaving this project at the mercy of another project, or on-going operations). Is the right level of expertise available?
- ❑ What kind of sponsorship is available for the project? Might sponsorship change based on future budget or political cycles?
- ❑ What is the confidence level in current estimates?
- ❑ Is scope clear and well defined?
- ❑ Review the Project Risk Checklist in the technology governance budget process website to help identy additional risks

CREATING THE TQR

Tasks to perform in creating the TQR include:

- Ensure understanding of relevant business information including goals and objectives related to this initiative
- Perform solution alternatives identification
- Perform feasibility assessment on identified alternatives
- Evaluate impact of each feasible alternative on people, process, and technology
- Estimate costs and benefits for each alternative that is considered feasible. This analysis is documented on supporting worksheets, with summary information copied to the TQR.
- Utilize/review checklists to ensure appropriate issues have been addressed
- Summarize the relative strengths and weaknesses of each alternative
- Recommend the best technology solution and provide supporting reasons
- Cross-walk findings back to business case
- Iterate if needed based on any cross-walk findings

As these tasks are performed, the TQR is updated. As alternatives are documented, utilize the Solution Outline Checklist to aid in ensuring each solution is adequately addressed. Each task is further discussed below.

RELEVANT BUSINESS INFORMATION SUMMARY

The first section of the TQR to be filled out is the Relevant Business Information Summary section. Before alternatives are even considered, it is important to ensure that the evaluation team has a good understanding for the business goals and objectives driving the initiative. Ideally, this information is contained within business case documentation and can be copied directly into the TQR. If not, then the TQR owner should determine the best way to summarize this information within the TQR. Areas to include within the summary are:

- Business problem/need/opportunity
- Business goals and objectives
- Expected benefits
- Key business metrics
- Other relevant information

Having business sponsors confirm what is documented will ensure that subsequent efforts are appropriately addressed at solving the right problems/issues.

ALTERNATIVES IDENTIFICATION

Once the business information has been identified, technical solution alternatives should be identified based on the business goals and objectives for the initiative. One alternative that should always be included is the option to 'do nothing'. This provides a baseline against which all other alternatives can be compared. If this option turns out to be the best, then work on a technical solution supporting the business case should be discontinued. Other obvious alternatives can be identified by looking at how other jurisdictions have solved similar problems, reviewing the market place for vendor solutions, and looking at potential modifications to existing solutions. Brainstorming with customers and technologists should also be performed to identify less readily apparent but potentially more effective alternatives.

As alternatives are identified, they should be recorded on the TQR by creating a new section for each alternative under the Detailed Alternatives Analysis section. The section for each alternative will include a description, and feasibility analysis. If the alternative warrants, impact and cost benefit analysis will also be documented. Each alternative's description should adequately describe its characteristics in enough

detail to fully understand the solution. Remember, all communication within the TQR should be targeted at executive business management (brief, clear, action focused, and avoid using technical jargon).

FEASIBILITY ANALYSIS

A brief feasibility assessment is performed for each alternative by filling in the Feasibility Analysis Table in the TQR. The feasibility analysis is intended primarily to identify options that warrant further exploration/investment. An option is considered feasible if it is technically do-able; meets some or all of the business goals/needs, and is expected to have reasonable cost, timeframe, and resource requirements (based on the judgment of the TQR owner). Infeasible options should not be pursued any further and identified in the alternatives summary as infeasible.

If results of the feasibility assessment are unclear (i.e. not sure if it is do-able or reasonable), then more effort may be required. The effort will depend on the area that needs more clarity. If technical do-ability is un-clear, then additional steps can be performed if not cost/time prohibitive. This might include bringing in specific technical expertise, developing a prototype of the solution, or trialing a pilot effort. If goal alignment is unclear, then further involvement from sponsors is warranted in evaluating the likelihood of meeting needs. If it isn't clear that a solution is reasonable, then impact and cost/benefit analysis can help to clarify and should be performed for these alternatives.

IMPACT ANALYSIS

If an alternative is considered feasible then an Impact Analysis should be performed. The impact analysis assesses the organizational effect that the solution will have on people, processes and technology. Experience with similar efforts is valuable in identifying the probable impacts of each solution Alternative.

- People impacts should describe how the solution will affect various people including staff, customers, support, management and others and should include who will be impacted and how
- Process impacts should focus on business or technical procedures that will need to be updated including business and support models.
- Technology impacts include how the county's architecture and supporting infrastructure will be changed and the impacts of those changes.

Impact information will be utilized in helping to assess the degree of fit for each solution and the associated value that it provides.

Benefits checklist – This checklist replicates the business benefits checklist provided for 2005 budget process.

King County Strategic Technology Plan and County Priorities:

- ❑ Aligns with department business and technology plans.
- ❑ Efficiencies, direct savings of county $s that could be "captured" and re-programmed
- ❑ Leverages existing technology or invests in infrastructure that makes future projects possible?
- ❑ Meets legal or regulatory requirements.
- ❑ Provide employee special needs accommodations. (ADA compliance)
- ❑ Provides critical and essential health or life-saving services to citizens?
- ❑ Value to the public (Cost Savings, Increased Services, Transparency)

Operational Benefits

- ❑ Eliminates risks to program operations and customer service if this project does not proceed
- ❑ Eliminates the reliance on expensive outsourced resources or non-supported technology.
- ❑ Mitigates scope, schedule, or cost overruns to an existing IT project.
- ❑ Reduces quantifiable non-staffing costs.
- ❑ Reduces staffing requirements.
- ❑ Simplifies operational procedures or results in cost-effective upgrades or replacements?
- ❑ Substantially improves the delivery of services.

Technical Benefits

- ❑ Improves "ease of use" for end-users.
- ❑ Improves security and reliability.
- ❑ Improves systems performance.
- ❑ Meets required service level objectives. (SLA's)
- ❑ Minimizes or simplifies technical support/maintenance.
- ❑ Provides new functionality for end-users.
- ❑ Replaces costly legacy systems.

Financial Benefits

- ❑ Creates new opportunities for revenue or profitability.
- ❑ Improves cash flow or revenue resources.
- ❑ Lowers development and design costs.
- ❑ Lowers maintenance and support costs.
- ❑ Lowers non-IT operation costs.
- ❑ Provides a Return on Investment (ROI).
- ❑ Reduces overtime and/or temporary labor costs.

COST AND BENEFIT ESTIMATES

Each solution alternative that is still considered feasible now performs a cost/benefit analysis. All costs and benefits (both tangible and intangible) should be identified and briefly described. This provides a fuller picture to the business case of the overall costs and benefits for a technical solution. Many initiatives are not focused on financial issues and will consequently be evaluated primarily on their intangible benefits.

The tangible costs and benefits are then documented in a separate cost and benefit spreadsheet, one for each feasible alternative. When complete, summary cost and benefit information can be copied from the spreadsheet back into the TQR for easy access.

The cost and benefit document consists of multiple tabs that identify all project costs, on-going support costs, and resulting quantifiable benefits. Total project costs should include all staff that work on a project (regardless of their funding source – Capital, Operating, Grant) and include staff required from non-IT areas as well as those directly from IT or working as contractors. Including this information more accurately reflects the true costs of the project. Where possible, benefits that are 'somewhat' tangible should be included on the cost and benefit spreadsheet (an example is cost avoidance) if a solid method for calculating dollar impacts can be identified. Supporting calculations should be added to supporting tabs so that numbers are explained as appropriate. Detailed instructions for filling out the cost and benefit worksheet are contained on the instructions tab within the cost and benefit document. When the document is complete, the summary tab can be copied into the TQR for easy reference.

Benefit articulation is becoming increasingly important in justifying new projects. Be sure to include all benefits that can be attributed to implementing the technology solution. Include any **business** benefits that will **only** be achieved by implementing the technology solution (another way to look at it is to question if the benefit is attainable **without** the technology solution?). Review the business benefits checklist for ideas on various benefits. Any benefits identified will be further evaluated and justified as part of the business case.

ALTERNATIVES SUMMARY

The alternatives summary quickly identifies the pros and cons of each alternative and is filled out for quick review and understanding. Reasons for dismissing un-attractive alternatives should be documented here.

Alternatives Checklist -Use this checklist to help in identifying multiple solution options

- ❑ What are the technically feasible alternatives? What are the risks of each?
- ❑ How have other counties/states solved this problem?
- ❑ Can each alternative be adequately evaluated within the business case development phase?
- ❑ Does the department / King County have the necessary expertise and resources for this alternative?
- ❑ Can a non-automated solution work?
- ❑ Are there commercially available solutions? Partially available solutions? What are the supporting architectures do they require?

SOLUTION RECOMMENDATION

After each alternative has been explored, a recommended solution should be chosen and the reasons for selecting the alternative should be given. This information is placed in the summary section of the TQR.

CROSS-WALK FINDINGS BACK TO BUSINESS CASE

The goal of the TQR is to adequately inform the business case about information technology included in the proposed solution. For this reason, all TQR findings need to be cross-walked back to the business case to ensure they are appropriately reflected in the business case (see appendix A, Step 2). This includes verification that the recommended solution will most fully meet the business needs as well as the impacts of the proposed solution on people, processes, technology, costs, benefits and more. As this

interaction occurs, changes or new ideas/opportunities may be identified for incorporation into the TQR and/or business case. There may be several iterations between the business case and the TQR to arrive at the preferred solution outline and a finalized TQR.

The following matrix identifies how TQR sections relate to various components of the business case:

TQR Sections	***Related Business Case Section*** (Based on 2006 budget business case template)	
Business Problem, Need, or Opportunity	1.1 Problem Statement/Vision and Goals	From BC
Business Goals & Objectives	1.1 Problem Statement/Vision and Goals & 1.4 Specific Business Objectives	From BC
Expected Benefits	1.7 Benefits and Other Impacts 1.7.4 Technology Infr. Benefits and Other Impacts	From BC
Key Business Metrics	1.14 Key success measures	From BC
Solution Description	1.6 Plan of Work, Approach, Timeline, Key Milestones	To BC
Feasibility Analysis Do-ability	1.12 Alternatives and Feasibility	To BC
Feasibility Analysis Goal Alignment	1.1 Problem Statement/Vision and Goals	To BC
Feasibility Analysis Resources required	1.10 Project Staffing	To BC
Feasibility Analysis Cost Impacts	2.0 Cost Estimates	To BC
Feasibility Analysis Critical Timelines	1.6 Plan of Work, Approach, Timeline, Key Milestones 1.3 Constraints, Criteria, Dependencies & Other Issues	To BC
Feasibility Analysis Implementation Considerations	1.3 Constraints, Criteria, Dependencies & Other Issues	To BC
Feasibility Analysis Risk Assessment	1.5 Project risk	To BC
Feasibility Analysis Critical Success and Other Factors to consider	1.14.X Critical (Key) Success Factors	To BC
Feasibility Analysis Reasons to Abandon	1.12 Alternatives and Feasibility	To BC
Impact Analysis	1.7 Benefits and Other Impacts	To BC
Impact Analysis – People	1.7.1 Customer Benefits and Other Impacts & 1.7.2 Employee Impacts	To BC
Impact Analysis – Process	1.7.3 Business Process Benefits and Other Impacts	To BC
Impact Analysis – Technology	1.7.4 Technology Infr. Benefits and Other Impacts & 1.11 Architecture and Interoperability	To BC
Impact Analysis – Technology - Hardware/Network	1.11.1 Hardware/Network	To BC
Impact Analysis – Technology - Software/Integration/Data Base	1.11.2 Software/Integration/Database	To BC
Impact Analysis – Technology - Internet/Security	1.11.3 Internet/Security	To BC
Cost / Benefit Summary	1.7.5 Cost Benefit Analysis	To BC
Cost Benefit Worksheet	2.0 Cost estimates & 1.7 Benefits and Other Impacts & 1.7.4 Technology Infr. Benefits and Other Impacts	To BC
Alternatives Summary	1.12 Alternatives and Feasibility	To BC
Solution Recommendation	1.13 Preferred Approach	To BC

The business case needs to determine how TQR information will be included in the business case. Ideally, the TQR information can be copied directly into the related business case section and added to any non-technical information already identified.

UPDATING THE TQR

The TQR is primarily intended to support project justification by providing information on the proposed technology solution and potential alternative technology solutions to the business case. Once a project has been approved, the TQR will no longer be updated. A rare exception is if the project must switch to an alternative solution after working towards implementing the selected solution and wishes to re-evaluate the alternatives. While any number of reasons may cause this change to occur, it should be avoided as much as possible due to the high cost related to starting over with a different solution.

As the business case for a project evolves along with the changing project, information that supports the technology component of the business case should be maintained through other project artifacts/documents (such as the detailed project plan, architectural design, etc.…).

USING THE TOOLKIT

While all projects should understand and follow the TQR guidelines, how the information is to be provided to the business case will be up to each project's unique needs and will be determined by the project. Professional judgment and common sense are needed to determine the best approach for each project.

- Most projects will use the templates contained in the TQR Toolkit and specifically developed to accompany and support the guidelines. These templates have been developed to integrate effectively with existing capital project budgeting requirements – reducing the potential for duplicate effort while also meeting multiple needs. It is strongly recommended that all projects utilize the cost benefit worksheet as it is currently required as part of the project approval process.
- Some projects will use existing (or new) tools/formats that are best suited for providing the needed information in their specific situation.
- Still other projects will either modify the new templates or combine them with existing practices.
- NOTE: The costs and benefits identified in the TQR must be rolled into the overall projects costs and benefits. While these may be the same, it is more typical for a project to have additional costs (and benefits) that are outside of the technical solution and consequently not contained within the TQR costs and benefits.

Regardless of the tools used, providing technology information in a clear, consistent, and repeatable format will enable project sponsors and managers to more accurately understand and include the technology information within their business case.

Included in the toolkit are templates (with instructions), examples, checklists, and a quick reference guide. The checklists should be utilized by all projects as a tool for reviewing the completeness of their TQR – regardless of which template/format is used. Not all projects should answer every question in every checklist. Checklists are intended as guides to help you in thinking about the characteristics of a solution. It is up to the TQR author to determine how best to document different components of the TQR based on the characteristics of the solution being proposed.

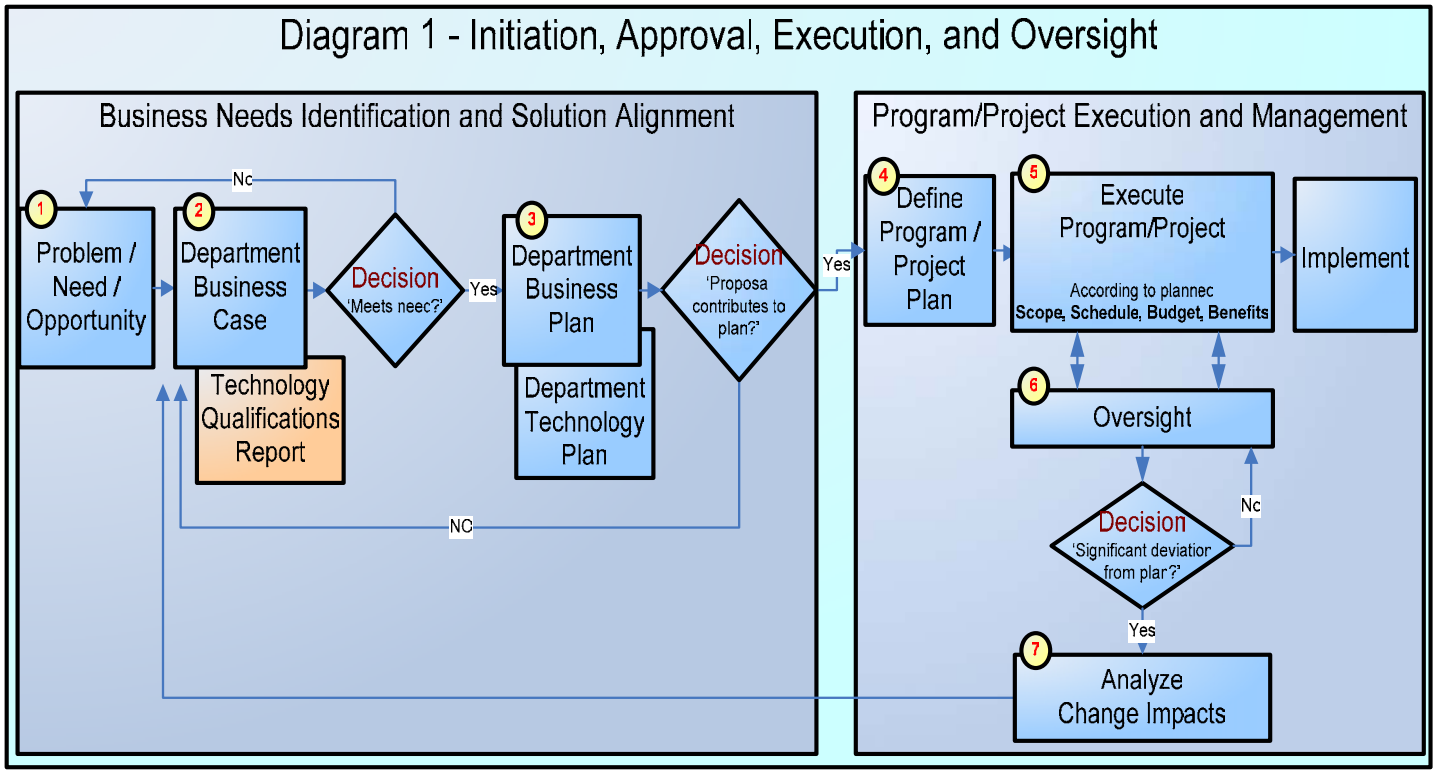
Over time, existing TQRs will also be accessed through the toolkit as they become available. The TQR Toolkit is located on the OIRM website under Project Managers / PRB.

APPENDIX A - BUSINESS AND TECHNOLOGY INITIATIVE LIFECYCLE OVERVIEW

This overview provides some perspective and context for how the TQR fits into the bigger picture of the business case development process for a typical project. It primarily discusses the typical lifecycle for an initiative, but also touches on budgeting and project oversight functions. As this (and other) processes are matured, greater integration and improvements can be expected.

HIGH LEVEL PROJECT INITIATION AND EXECUTION PROCESSING FLOW

The following diagram illustrates the major tasks involved in identifying, approving, and executing a project and the processing flow between those tasks.



The activities on the left side of the diagram are performed before the project is underway in order to initiate the project. These activities typically occur within the impacted department and can be performed relatively quickly when compared with project execution activities. Of course this will depend on the complexity, risk, and information available on potential solutions as well as resource availability to identify and document the solution outline. The TQR should involve those who will be responsible for implementing the technology component of the solution as much as possible. This increases the incentive for understanding and accuracy of the TQR along with increasing the commitment to deliver the identified solution.

The activities on the right side of the diagram are iterative and continuously performed until the project is completed. Oversight activities occur within and beyond the department as execution activities proceed. Significant changes from a projects plan that are identified during the execution of a project will trigger an evaluation of the impacts of that change upon the business case. Any changes to the business case should be reviewed and approved by appropriate decision makers.

ACTIVITIES AND DELIVERABLES RELATED TO PROCESSING FLOW

This chart illustrates the activities to be performed and the deliverables that should result from the high level processing flow items identified in diagram 1. The activities are cross-referenced through the numbers attached to each.

Activities	Clarify the business problem, opportunity, or need and the drivers behinc them	- Identify solutions - Validate that solution solves problem - Justify that benefits will outweigh costs - Determine that solutions are feasible - Order of magnitude estimates for costs, benefits, time - Identify Critical Success Factors - Assess and mitigate Risks	Update existing Plans or create new components Identifies Impacted -Business Goals -Objectives -Organizational anc operational Metrics -Financials -Resources	Define detailed rqmts tc ensure solution meets needs Fully define Scope, Schedule, Budget anc Benefits for People, process and technology Re-align expectations (if needec)	Execute project based on Scope Schedule, Budget anc Benefits definec in the busines case and project plans	Perform or-going project monitoring & oversight by PM, Sponsor, PRB Identify any significant deviations from project plan related to scope, schedule, budget anc / or benefits	Determine impact of significant changes upor - Business Case - Project Plar Significance threshold is a change of 10% or more tc Scope, Schedule, Budget or Benefits
	1	2	3	4	5	6	7
Deliverables	Conceptua Business Case	Budget Submittal Business Case Technology Qualifications Report (TQR) - Alternatives identificatior - Feasibility analysis - Organizational Impact analysis - Cost / Benefit Analysis	Updated Business Plar Updated Technology Plar	Project Plar – Complete Updated Business Case	Solution ready for implementatior Related business process updates, training, system & user manuals	Monthly Status reports Steering Committee and PRB reports	Change Impact Analysis Refreshed Business Case - Update TQR only if new alternative selected Revised Project plar

PROJECT INITIATION

Before pursuing a business initiative to solve a business problem or need, a department should go through several steps to 'qualify' that the initiative is worth undertaking. If the project involves information technology, then the technology components must also be qualified. This assessment and qualification process is part of the initiation stage of a project. It is typically performed on all projects and is part of the natural progression of a project while moving from an idea to an implemented solution.

Initial assessments should determine whether the opportunity or solution is economical, technically feasible, within resource constraints, and in alignment with departmental business and technology plans. If appropriate; RFI, RFQ, and RFP's can (and should) be used to acquire needed information. Once the department has verified that the business initiative makes sense from their perspective, a final review should address how the initiative fits within countywide goals, efforts and priorities. These initial verification steps serve not only to ensure that the project is worth moving forward, but also to align stakeholders and decision makers on expectations surrounding a project. Once aligned, future review and decision making can be more accurately and effectively performed.

The project should proceed from the initiation stage to the execution stage if it is 'qualified'. This means that decision makers believe adequate value exists and that appropriate diligence has been performed in order to determine and describe that value. The business case, TQR, department business plan, and department technology plan should be utilized in making this decision.

PROJECT EXECUTION

Moving into the execution phase of a project means that initial expectations and goals have been communicated and approved, but the bulk of the project work still remains. The first step in project execution is to develop a detailed project plan. Typically this involves completing detailed business and technical requirements and ensuring that the business case adequately reflect and cover all requirements. The project plan should also speak to tasks needed to address the impacts on people and

processes (such as training, business process re-design, etc.) in addition to technology. When the detailed project plan is completed; **Scope, Schedule, Budget and Benefits** should all be compared and refreshed in new versions of the business case. Significant changes are communicated with decision makers in order to re-set their expectations and to revisit or re-open decisions if appropriate.

If the project is utilizing a vendor solution, then the RFP will typically be issued and evaluated after requirements have been finalized (Note: the TQR can be used as input to RFP materials). This can be done as part of the detailed planning phase of the project or immediately following planning completion. Ideally, vendor responses can be incorporated into finalized scope, schedule, budget and benefits determinations included in the detailed project plan. Funding to cover probable contract needs can then be released based on plans that included probable vendor impacts and before a contract is signed.

As the project moves into the remaining execution phase steps of design, build/install, test, and implement; project progress should be periodically compared with the baseline plan. Any significant deviations from the plan (and significant deviations should be expected at some point during the majority of projects involving IT) should trigger an impact analysis on the business case. Based on the change impacts, the department should re-assess the value of the project (irrespective of sunk costs) and make appropriate decisions in response to those changes.

APPENDIX B – TQR STRATEGIES

Each business opportunity, or problem and its related solution is different. Judgment and common sense need to be applied in each situation to determine the appropriate approach. These concepts are intended to help project teams make effective decisions related to the TQR.

WHEN TO MOVE FROM PROJECT INITIATION TO EXECUTION?

The quick answer is "when sponsors have confidence that there is value to the overall project based on the contents of the business case and TQR". These guidelines should help in determining when that is.

PROJECT SELECTION - NOT ALL BUSINESS CASES SHOULD BE APPROVED

From a project portfolio standpoint, the goal is to maximize the return on investment across all projects. This requires a strategy that involves trade-offs between costs and benefits, long and short term time horizons, Strategic and tactical goals, risk and certainty, diversification, strategic technical goals and current architecture, entrepreneurialism and conservatism, and other factors. A projects fit within the overall portfolio should determine if it is appropriate at this time to initiate a project.

King County should set performance targets around initiatives and the percentage of projects that move forward at key decision points in the process. This would help to:

- Ensure that new, creative, risky, high payback ideas and approaches are entering the pipeline knowing that only those that merit further investment will continue.
- Enables the culture to change to define project 'success' differently. The definition of success must move from
  - 'Implement a project once it has been thought of at all costs' to
  - 'Only projects with positive payback/value should continue to be pursued' The goal is to minimize the time from when a projects perceived value turns negative to the time expenditures on that project are stopped. Determining that a project has no value early on

Sponsorship Checklist - Use this checklist to help in evaluating the value of the proposed solution

- ❑ County
  - Does it have the appropriate level of management commitment to do the proposed initiative?
  - Can the proposing sponsor secure the required resources and funding to support the go forward plan?
  - How much Risk is involved? Are risks being mitigated?
  - How does this effort impact others in the county?
  - Does this project complement/improve the existing project portfolio
- ❑ Department
  - Does management have the appropriate level of commitment to the program?
  - Are the necessary resources available to support the initiative going forward?
  - Have appropriate resources participated in the TQR & BC?
  - Are appropriate project management resources available?
  - Does this initiative get us closer to strategic departmental goals
  - How will success be measured? Are we confident that benefits will be realized?
  - Are the costs worth the benefits?
- ❑ Initiative
  - What is the strategic significance of the initiative by the department's involvement and / or King county (i.e. executive, other separately elected officials, Council)
  - Will people, process, and technology all be addressed within the projects scope? By the project manager?

should be rewarded. Implementing a project that never realizes its desired and expected benefits should not.

The target performance measures for a healthy project portfolio may look something like:

- 10% of business cases never initiate a project
- 5% of initiated projects are cancelled after detailed plans are created
- 2% of projects are cancelled after design is complete
- 1% of projects are cancelled during solution development / implementation
- 90% of all implemented projects accomplish their expected benefits

This is just an example, actual targets needs to be set based on actual performance and detailed management understanding, interaction, and appropriate reward systems.

HOW MUCH EFFORT SHOULD BE INVESTED IN PROJECT INITIATION?

Or "How detailed does the TQR & business case need to be?"

At a minimum, a business case and supporting TQR should to be created for all initiatives involving IT and impacting the County's technical infrastructure. Knowing exactly how many hours that should take and how detailed these documents should be can be difficult to determine. Due diligence should be performed so that there is comfort in the business case costs and benefits and confidence that the identified solution is do-able (no show-stoppers). Factors that will affect the effort required include the complexity and size of the problem/need, the risks involved, the availability of existing information that is pertinent to the effort, and resource availability and skill sets to work on the business case and TQR. There must be enough information in the business case so that it addresses all major, known requirements, is easily understood by a high level executive audience, and is credible. Additional dimensions that must be addressed include Costs, benefits, technology, impacts, and timeframe.

The business case should be updated (if needed) as better information about the project is obtained. One good example of this is once the detailed project plan has been created.

The following guidelines will help to identify the right amount of effort to create the initial TQR:

- Project initiation is intended to validate that the concepts surrounding the project merit further investment.
- For the majority of initiatives, BUSINESS CASE and TQR creation should take weeks (assuming appropriate, dedicated staff are available) not months. On very large, complex, or vague initiatives several months may be needed.
- The BUSINESS CASE and TQR need to cover all high-level requirements, but should not wait for detailed requirements. As detailed requirement are gathered, the business case can be updated to reflect those details.
- Ensuring 100% estimating accuracy is too costly and takes too much time. Initial TQR estimates should be focused on orders of magnitude and created based on experience, similar past projects, and minimal research. More detailed estimates will be created later during the planning phase of the project as part of the detailed project plan.
- Initial projections should be expected to change as more is learned during the life of the project. Decision makers need to understand this and change their expectations on the accuracy of estimating relative to project progress. Close attention should be paid to the reasons behind any changes to determine if future, similar estimating changes are likely.
- Initial estimates should be conservative, provide ranges, and tend to err on the high side.
- Expect the project (and business case) to change over time. Because of the increased rate of change in the business, technical, and process environment, it should be expected that estimates will change over time as more is known about the project. The key is to understand the reasons for change (was it change in business strategy? Or not adding prior figures correctly?) and then to incorporate updates to the plan and schedule that are valid. Whenever expectations are

formally reset, then sponsorship and project management need to use the new expectations in reporting progress and making future decisions.

- Project contingency should be utilized on projects to buffer the majority of projects from estimating in-accuracy. The amount of contingency should be based on many factors including risk, experience with similar initiatives, and an organizations historical estimating accuracy. Contingency can also be used for quality reviews to ensure that appropriate progress is being made.

INCLUDE ALL COSTS IN BUSINESS CASE COST/BENEFIT ANALYSIS

An effort should be made to be thorough (include all types of costs) rather than exact (exact labor rates and hours known for all activities). This should include:

- Direct and indirect labor
  - Both IT and non-IT
  - From capital, operating, or grant funding
- Capital costs
- Equipment costs
- On-going costs of operations (to maintain whatever is implemented)

Note: both cost estimation and actual cost collection should include all efforts required to complete a project. This includes effort that comes from staff that is operations funded. If all costs are not included as part of the project, then the business case can easily be skewed and not reflect the full costs of implementing a project. It also hampers our ability to accurately estimate the cost and effort associated with future projects.

CONTINUAL PROCESS IMPROVEMENT

In order to continuously improve our estimating skills, estimates and actuals need to be documented and reviewed in order to determine areas of discrepancy. This in turn leads to greater understanding and improved ability on future estimates. Project monitoring should include manual and automatic triggers based on comparing actual performance to planned performance.

Benefit realization reports should be compared to estimates made at various stages of the project to improve estimating ability in this area as well.

When enough data is collected, appropriate contingency values for each project can and should be created based on historical project performance.

APPENDIX C - GUIDING PRINCIPLES FOR INFORMATION TECHNOLOGY

These guiding principles provide the policy framework to promote a standard and cost effective approach to
delivering and operating information technology to achieve the goals of improving

- Efficiency
- public access to our government
- customer service
- transparency of and accountability for decisions

1 Central Review & Coordination of Information Technology	♦ Information technology investments should be coordinated at a countywide level to leverage development efforts, reduce duplicative costs and ensure compatibility of systems.
2 Information Technology Enables Effective and Efficient Service Delivery	♦ Funding approval through the technology governance structure should be based on a sound business case that documents measurable outcomes, including service delivery improvements. ♦ When assessing new software solutions, commercial off-the-shelf software packages that adequately meet the business requirements of the county are preferable to custom developed applications. The county should determine requirements and analyze both operational and financial business cases when evaluating the alternatives of building or buying new software applications. ♦ Information technology investments should be effectively managed and tied directly to service performance results. ♦ Investments in legacy systems should be limited to mandated and essential changes that can demonstrate extending the useful life of the system.
3 Information Technology Standards	♦ Hardware, software, and methodologies for management and development should adhere to countywide standards adopted through the technology governance structure. ♦ Hardware and software should adhere to open (vendor independent) standards to promote flexibility, inter-operability, cost effectiveness, and mitigate the risk of dependence on individual vendors, where applicable. The County will proactively define and describe these standards in RFPs and other communications with vendors. ♦ Technology operations and project management should adhere to best practices to ensure consistency, achieve efficiencies, and maximize success. ♦ Technical staff should be provided with appropriate training to ensure effective management of information technology resources.
4 Access to Information and Services	♦ Information and services should be provided using web-based technology with standard navigation tools and interfaces where appropriate. ♦ A reliable and secure communication and computer infrastructure should be provided to ensure seamless self-service access to information and services.

5 Business Process Improvement	♦ Industry best practices should be applied to optimize business processes. ♦ When implementing commercial off-the-shelf software packages, the county should adopt and implement industry best practices, redesigning business processes as required in order to improve operations, minimize customization and speed the delivery of new business applications ♦ Comprehensive business solutions should be developed across organizational boundaries to cover end-to-end business processes. ♦ Data should be captured once and shared to reduce cost, duplication of effort and potential for error.
6 Privacy and Security	♦ The county should adopt and implement an effective privacy policy that articulates the manner in which it collects, uses, and protects data, and the choices offered to protect personal information within the constraints of public disclosure law. ♦ Reasonable, cost-effective measures should be implemented to protect data, hardware and software from inappropriate or unauthorized use, alteration, loss or destruction. ♦ Auditable security measures should be part of the initial architecture and design as information technology solutions are developed and implemented.

APPENDIX D – COMMON VENDOR INFORMATION

For Vendors interested in creating a TQR, further information on King County's information technology policies and procedures are available on the King County website at Office of Information and Resource Management Policy Page. Please review this site for the most current policies in effect.

Other, relevant contract forms can be produced upon request. Examples of these documents include:

- King County Privacy notice
- Consultant Disclosure
- Personal Inventory
- Affidavit of Compliance
- Domestic Partner Benefits
- ADA Compliance
- Union/Employee Referral
- Non-Disclosure Agreement
- Proof of insurance form

APPENDIX E – TQR TOOLKIT

Templates and examples are available on the intranet to aid in developing the Technology Qualifications Report. They are located in the project managers TQR Toolkit on the OIRM web site under Project Managers / PRB. Included in the toolkit are:

- Guidelines
  - Technology Qualifications Report Guidelines (this document)
  - TQR Quick Reference Guide
- Templates
  - TQR (including detailed instructions)
  - TQR Cost Benefit Analysis worksheet
- Examples
  - TQR
  - TQR Cost Benefit Analysis worksheet
- Checklists
  - Risk Assessment
  - TQR Completeness
  - Solution Outline
  - Benefits
  - Alternatives
  - Sponsorship

The templates contain additional instructions on how to fill them out effectively. Review the related examples to get additional ideas on what content may be appropriate.